AMENDMENTS TO THE CLAIMS

1. (Previously presented) Apparatus for mobile communication, comprising:

a switch, having a plurality of ports for connection to a wired local area network (LAN);

a plurality of access points, which are arranged in a wireless local area network (WLAN) to communicate over the air in accordance with a predefined WLAN protocol on a common frequency channel with a mobile station using a common basic service set identification (BSSID) for all the access points, and which are coupled by the LAN to the switch so that upon receiving at one or more of the access points an uplink packet transmitted over the WLAN by the mobile station on the common frequency channel, the one or more of the access points convey messages responsively to the uplink packet over the LAN to the switch; and

a manager node, which is coupled to the switch so as to receive the messages and is adapted to process the messages so as to select one of the access points to respond to the uplink packet, and to send an instruction via the switch to the selected one of the access points to transmit to the mobile station a response to the uplink packet within a time limit specified by the WLAN protocol.

2. (Original) The apparatus according to claim 1, wherein the access points have respective service areas, and are arranged so that the service areas substantially overlap.

3. (Original) The apparatus according to claim 1, wherein the access points are configured to communicate with the mobile station substantially in accordance with IEEE Standard 802.11.

4. (Original) The apparatus according to claim 1, wherein the LAN is an Ethernet LAN.

5. (Original) The apparatus according to claim 1, wherein the LAN is characterized by a data transmission rate of at least 1 Gbps.

6. (Original) The apparatus according to claim 1, wherein the LAN is characterized by a data transmission rate that is substantially less than 1 Gbps.

7. (Original) The apparatus according to claim 1, wherein the manager node has an address on the LAN, and wherein the access points are adapted to convey the messages over the LAN in the form of data frames directed to the address of the manager node.

8. (Original) The apparatus according to claim 7, wherein the access points are configured to communicate over the LAN exclusively with the manager node.

9. (Previously presented) The apparatus according to claim 7, wherein the uplink packet comprises an uplink data packet, and wherein the access points are configured to fragment the uplink data packet among a succession of the data frames for conveyance over the LAN via the switch to the manager node.

10. (Original) The apparatus according to claim 9, wherein the access points are operative to fragment the uplink data packet so that the data frames have a length that is no more than 10% of a maximum frame length permitted on the LAN.

11. (Original) The apparatus according to claim 9, wherein the access points are operative to fragment the uplink data packet so that the data frames have a length that is equal to a minimum frame length permitted on the LAN.

12. (Original) The apparatus according to claim 9, wherein the uplink data packet comprises a destination address, and wherein the manager node is adapted to reassemble the uplink data packet from the succession of the data frames, and to convey the reassembled packet via the switch over the LAN to the destination address.

13. (Original) The apparatus according to claim 12, wherein the manager node is connected to first and second ports among the plurality of the ports of the switch, and is configured to receive the data frames from the access points through the first port and to convey the reassembled packet to the LAN via the second port.

14. (Original) The apparatus according to claim 13, wherein the manager node is further configured to receive a downlink data packet from the LAN via the second port, and to fragment the downlink data packet into a further succession of the data frames and to convey the further succession of the data frames via the first port to the selected one of the access points, which is operative to reassemble the downlink data packet for transmission over the WLAN to the mobile station.

15. (Original) The apparatus according to claim 9, wherein the address of the manager node on the LAN comprises a Layer 3 address, and wherein each of the succession of the data frames among which the uplink data packet is fragmented comprises a Layer 3 encapsulating packet, having a destination address corresponding to the Layer 3 address of the manager node.

16. (Previously presented) The apparatus according to claim 1, wherein the messages conveyed by the access points responsively to the uplink packet comprise an indication of a strength of an uplink signal, conveying the uplink packet, received respectively by each of the one or more of the access points, and wherein the manager node is adapted to select, responsively to the indication and prior to receiving the messages from all of the one or more of the access points, the one of the access points to respond to the uplink packet.

17. (Original) The apparatus according to claim 16, wherein the access points are adapted to set, responsively to the strength of the uplink signal, a priority indicator in the messages to be conveyed over the LAN so as to cause the switch to deliver a first message indicating a strong uplink signal before delivering a second message indicating a weak uplink signal.

18. (Original) The apparatus according to claim 16, wherein the access points are adapted, responsively to the strength of the uplink signal, to delay transmission of some of the messages over the LAN, so that a first message indicating a strong uplink signal is transmitted with a smaller delay than a second message indicating a weak uplink signal.

19. (Currently amended) Apparatus for mobile communication, comprising:

a switch, having a plurality of ports for connection to a wired local area network (LAN);

a plurality of access points, which are arranged in a wireless local area network (WLAN) to communicate over the air with a mobile station, and which are coupled by the LAN to the switch so that upon receiving at one or more of the access points an uplink message transmitted over the WLAN by the mobile station, the one or more of the access points convey the uplink message over the LAN to the switch; and

a manager node, which is connected to first and second ports among the plurality of the ports of the switch, and is configured to receive uplink messages from

the access points exclusively through the first port and to convey the uplink messages exclusively via the second port over the LAN to respective destination addresses of the message,

wherein the manager node has first and second addresses on the LAN, which are respectively associated with the first and second ports, and wherein the access points are adapted to convey the uplink messages over the LAN in the form of data frames directed to the first address.

20. (Original) The apparatus according to claim 19, wherein the access points are configured to communicate over the LAN exclusively with the manager node via the first port in response to uplink messages received from the mobile station.

21. (Original) The apparatus according to claim 19, wherein the access points are configured to communicate with the mobile station substantially in accordance with IEEE Standard 802.11.

22. (Canceled)

23. (Currently amended) The apparatus according to ~~claim 22~~ claim 19, wherein the uplink message comprises a data packet, and wherein the access points are adapted to fragment the uplink data packet among a succession of the data frames for conveyance over the LAN to the first address, and wherein the manager node is adapted to reassemble the data packet from the succession of the data frames, and to convey the reassembled data packet via the second port over the LAN to the destination address, using the second address as a source address.

24. (Original) The apparatus according to claim 23, wherein the access points are operative to fragment the data packet so that the data frames have a length that is no more than 10% of a maximum frame length permitted on the LAN.

25. (Original) The apparatus according to claim 23, wherein the access points are operative to fragment the data packet so that the data frames have a length that is equal to a minimum frame length permitted on the LAN.

26. (Original) The apparatus according to claim 23, wherein the address of the manager node on the LAN comprises a Layer 3 address, and wherein each of the succession of the data frames among which the uplink data packet is fragmented

comprises a Layer 3 encapsulating packet, which is addressed to the Layer 3 address of the manager node.

27. (Original) The apparatus according to claim 19, wherein the manager node is further configured to receive a downlink message from the LAN via the second port, and to convey the downlink message via the first port to one of the access points, which is operative to transmit the downlink message over the WLAN to the mobile station.

28. (Previously presented) A method for mobile communication, comprising:

arranging a plurality of access points in a wireless local area network (WLAN) to communicate over the air with a mobile station in accordance with a predefined WLAN protocol using a common basic service set identification (BSSID) for all the access points;

receiving at one or more of the access points an uplink packet transmitted over the WLAN by the mobile station using the common BSSID;

conveying messages responsively to the uplink packet from the one or more of the access points over a wired local area network (LAN) linking the access points to a manager node;

processing the messages at the manager node so as to select one of the access points to respond to the uplink packet, and conveying a response instruction from the manager node to the selected one of the access points; and

transmitting from the selected one of the access points to the mobile station responsively to the response instruction a response to the uplink packet within a time limit specified by the WLAN protocol.

29. (Original) The method according to claim 28, wherein the access points have respective service areas, and wherein arranging the plurality of the access points comprises arranging the access points so that the service areas substantially overlap.

30. (Original) The method according to claim 28, wherein arranging the plurality of the access points comprises arranging the access points to communicate with the mobile station substantially in accordance with IEEE Standard 802.11.

31. (Original) The method according to claim 28, wherein the LAN is an Ethernet LAN.

32. (Original) The method according to claim 31, wherein conveying the messages comprises sending the messages over the Ethernet LAN at a data transmission rate of at least 1 Gbps.

33. (Original) The method according to claim 31, wherein conveying the messages comprises sending the messages over the Ethernet LAN at a data transmission rate that is substantially less than 1 Gbps.

34. (Original) The method according to claim 28, wherein the manager node has an address on the LAN, and wherein conveying the messages comprises transmitting the messages over the LAN in the form of data frames directed to the address of the manager node.

35. (Original) The method according to claim 34, wherein the access points are configured to communicate over the LAN exclusively with the manager node.

36. (Previously presented) The method according to claim 34, wherein receiving the uplink packet comprises receiving an uplink data packet sent by the mobile station, and wherein transmitting the messages comprises fragmenting the uplink data packet among a succession of the data frames for conveyance over the LAN via the switch to the manager node.

37. (Original) The method according to claim 36, wherein fragmenting the uplink data packet comprises generating the data frames with a length that is no more than 10% of a maximum frame length permitted on the LAN.

38. (Original) The method according to claim 36, wherein fragmenting the uplink data packet comprises generating the data frames with a length that is equal to a minimum frame length permitted on the LAN.

39. (Original) The method according to claim 36, wherein the uplink data packet comprises a destination address, and comprising reassembling the uplink data packet at the manager node from the succession of the data frames, and conveying the reassembled packet over the LAN to the destination address.

40. (Original) The method according to claim 39, wherein the LAN comprises a switch, and the manager node is connected to first and second ports of the switch, and wherein transmitting the messages comprises transmitting the data frames from the access points through the first port to the manager node, and wherein conveying the

reassembled packet comprises transmitting the reassembled packet to the LAN via the second port.

41. (Original) The method according to claim 40, and comprising:

receiving at the manager node a downlink data packet from the LAN via the second port;

fragmenting the downlink data packet into a further succession of the data frames;

conveying the further succession of the data frames via the first port to the selected one of the access points; and

reassembling the downlink data packet at the selected one of the access points for transmission over the WLAN to the mobile station.

42. (Original) The method according to claim 36, wherein the address of the manager node on the LAN comprises a Layer 3 address, and wherein each of the succession of the data frames among which the uplink data packet is fragmented comprises a Layer 3 encapsulating packet, having a destination address corresponding to the Layer 3 address of the manager node.

43. (Previously presented) The method according to claim 28, wherein conveying the messages comprises conveying an indication of a strength of an uplink signal, conveying the uplink packet, received respectively by each of the one or more of the access points, and wherein processing the messages comprises selecting at the manager node, responsively to the indication and prior to receiving the messages from all of the one or more of the access points, the one of the access points to respond to the uplink packet.

44. (Original) The method according to claim 43, wherein conveying the indication comprises setting, responsively to the strength of the uplink signal, a priority indicator in the messages to be conveyed over the LAN so as to cause the switch to deliver a first message indicating a strong uplink signal before delivering a second message indicating a weak uplink signal.

45. (Original) The method according to claim 43, wherein conveying the indication comprises delaying, responsively to the strength of the uplink signal, transmission of some of the messages, so that a first message indicating a strong

uplink signal is transmitted with a smaller delay than a second message indicating a weak uplink signal.

46. (Currently amended) A method for mobile communication, comprising:

coupling a manager node to first and second ports among a plurality of ports of a switch in a wired local area network (LAN);

assigning to the manager node first and second addresses on the LAN, which are respectively associated with the first and second ports;

arranging a plurality of access points in a wireless local area network (WLAN) to communicate over the air with a mobile station;

receiving at one or more of the access points an uplink message transmitted over the WLAN by the mobile station, the uplink message containing a destination address;

passing the uplink message from the one or more of the access points over the LAN to the manager node, in the form of one or more data frames directed to the first address, via the first port of the switch, which is configured to receive uplink messages from the access points exclusively through the first port; and

conveying the uplink message from the manager node via the second port over the LAN to the destination address, wherein the switch is configured to convey the uplink messages to respective destination addresses exclusively via the second port.

47. (Original) The method according to claim 46, wherein arranging the plurality of the access points comprises configuring the access points to communicate over the LAN exclusively with the manager node via the first port in response to uplink messages received from the mobile station.

48. (Original) The method according to claim 46, wherein arranging the plurality of the access points comprises arranging the access points to communicate with the mobile station substantially in accordance with IEEE Standard 802.11.

49. (Canceled)

50. (Currently amended) The method according to ~~claim 49~~ claim 46, wherein the uplink message comprises an uplink data packet, and wherein passing the uplink message comprises fragmenting the upstream data packet among a succession of the data frames for conveyance over the LAN to the MAC address, and wherein conveying the uplink message comprises reassembling the data packet from the

succession of the data frames, and conveying the reassembled packet via the second port over the LAN to the destination address, using the second address as a source address.

51. (Original) The method according to claim 50, wherein fragmenting the uplink data packet comprises generating the data frames with a length that is no more than 10% of a maximum frame length permitted on the LAN.

52. (Original) The method according to claim 50, wherein fragmenting the uplink data packet comprises generating the data frames with a length that is equal to a minimum frame length permitted on the LAN.

53. (Original) The method according to claim 50, wherein the address of the manager node on the LAN comprises a Layer 3 address, and wherein each of the succession of the data frames among which the uplink data packet is fragmented comprises a Layer 3 encapsulating packet, which is addressed to the Layer 3 address of the manager node.

54. (Original) The method according to claim 46, and comprising:

receiving at the manager node a downlink message from the LAN via the second port;

conveying the downlink message via the first port from the manager node to one of the access points; and

transmitting the downlink message over the WLAN from the one of the access points to the mobile station.